TRADE LIBERALIZATION AND FINANCIAL CRISIS: A RISK ASSESSMENT OF U.S. FREE TRADE DECISIONS AFTER THE COLD WAR

by
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Abstract

This research study addresses the epistemological shortcomings of prevailing Political Economy theory as it relates to core assumptions about free trade and their implications for managing the economic risks that arise from capital and labor re-allocations. This study will examine the two most significant U.S. trade decisions after the Cold War, the multilateral trade negotiations of 1995 known as the Uruguay Round, and the Permanent Normal Trade Relations (PNTR) agreement with China in 2000, and their potential impacts on the onset of the 2008 global financial crisis.

This research study will use statistical methods, specifically regression analysis, to capitalize on existing quantitative economic data and to make empirically supported inferences about any relationship between trade liberalization and financial crisis. Furthermore, this methodology lends itself well to operationalizing the concept of risk.

This study finds that the Uruguay Round and the PNTR likely contributed to a U.S. trade deficit that was already growing prior to the 2008 crisis. The trajectory of this trade deficit exhibits a strong linear relationship with the movement of U.S. housing prices during the same period. This study concludes that U.S. trade liberalization during the period considered was akin to an antecedent condition in which foreign states, driven by relative gains concerns, transferred financial risk onto the United States at a time when domestic factors were simultaneously driving the formation of a national housing bubble.

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Introduction

After the fall of the Soviet Union at the end of 1991, the United States stood alone as the world's economic and military superpower. With the national security threat of communism fading into the background, the predominant focus for U.S. policy makers began to shift toward economic issues that had previously been given secondary consideration.

In July 1990, the U.S. experienced a mild recession that lasted until March 1991 and dispelled a long period of optimism in the labor market. Previously robust white-collar sectors like finance and real estate suffered net job loss for the first time since World War II.[1] As a result, these economic issues gained salience in the 1992 presidential election. Democratic Party nominee Bill Clinton roundly criticized incumbent George H.W. Bush for the recession and eventually defeated him.

Speaking to the Senate Finance Committee in March 1993, President Clinton's new U.S. trade representative Mickey Kantor argued that economic issues, which had previously been given short shrift in favor of national defense concerns during the Cold War, were now a critical priority. Kantor argued further that expanded and open trade was a necessary precondition for increased economic growth.[2] International sentiment also reflected Kantor's concerns. Many other states realized that they too could no longer afford to ignore economic issues now that the common threat of the Soviet Union had dissolved.[3]

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[1] Jennifer M. Gardner, "The 1990-91 Recession: How Bad Was the Labor Market?" *Monthly Labor Review* 117, no. 6 (1994): 10-11.

[2] Mickey Kantor, "US Trade Policy and the Post-Cold War World," 1993, *U.S. Department of State Dispatch* 4 no. 11: 143

[3] C. Fred Bergsten 1992, "The World Economy After the Cold War," *California Management Review* 34, no. 2 (1992): 54, doi:10.2307/41166693.

In part, this advocacy for expanded trade hinted at a larger paradigm shift in U.S. economic policy following the end of the Cold War. Speaking to the Eastern Economic Association in 2004, Ben Bernanke argued that:

"One of the most striking features of the economic landscape over the past twenty years or so has been a substantial decline in macroeconomic volatility…The increased depth and sophistication of financial markets, deregulation in many industries, the shift away from manufacturing toward services, and ***increased openness to trade and international capital flows*** *are other examples of structural changes that may have increased macroeconomic flexibility and stability."*[4]

In his speech, Bernanke is referring to what is now known as The Great Moderation. The Great Moderation is a period of time that coincides with the tenure of Alan Greenspan as the Chair of the Federal Reserve between 1987 and 2006. During this timeframe, the prevailing narrative was that, in Bernanke's view, the chaotic nature of markets had been reduced because of three factors: structural changes, smarter policy, and good luck.[5] As a result, it was believed that these factors would help provide the stability that was required for sustained economic growth. Of course, the 2008 Global Financial Crisis directly challenged this narrative of control. Volatility had been gradually building in the U.S. housing sector for years, which served as the catalyst for the crisis.

The purpose of this research study is to examine the policy aspect of The Great Moderation, namely trade liberalization, and its relationship to the 2008 crisis. Therefore, the research question can be stated as: what effect, if any, did trade liberalization after the Cold War have in the formation of the 2008 global financial crisis?

A key component of this analysis is to examine how the faulty expectations of The Great Moderation, with regard to managing volatility, may have created an opposite

[4] Ben Bernanke, "Remarks by Governor Ben S. Bernanke" (speech, Washington, DC, Feb 20, 2004), *The Federal Reserve Board*, https://www.federalreserve.gov/boarddocs/speeches/2004/20040220/
[5] Ibid.

effect thanks to the removal of international trade barriers. For the purposes of this research study, volatility refers to the degree of variation in a random variable that is relative to its mean. A variable with high volatility carries both extreme upside and downside, or benefit and harm, respectively. In markets, volatile phenomenon like stocks are inherently risky. Risk in this study means exposure to loss or injury. Risk can, under certain conditions, be operationalized as a pure gamble that is a function of both probability and consequence, such as the outcomes generated by a series of fair coin flips. By using this framework of volatility and risk, this study identifies some epistemological problems about free trade that arise in the Political Economy literature. By incorporating these perspectives, this study encourages a richer discourse about the relationship between a state's trade decisions and its economic security in a dynamic world characterized by unpredictable outcomes.

Accordingly, the bulk of data analysis will rely on quantitative methodology to answer the research question. In particular, regression analysis will be used as the primary treatment method for identifying any potential relationship between trade liberalization and the 2008 crisis. Furthermore, this study capitalizes on the availability of U.S. government data that aims to capture the aggregate behavior of markets.

Background

Given the new economic mandate after the Cold War, both the Bush and Clinton administrations began to look at policy options that could address the cloudy economic outlook brought on by the 1990-1991 recession. Consistent with Kantor's observation, expanded trade was an appealing option, especially free trade agreements (FTAs). Between 1994 and 2000, the United States government passed three major free trade

deals, among other smaller deals in the 2000s, that helped to further integrate the U.S. into the global economy. The North American Free Trade Agreement (NAFTA) came into force on January 1, 1994 which reduced regional trade barriers and lowered transaction costs between the U.S., Canada, and Mexico. One year later, President Bill Clinton signed the executive order that officially cemented U.S. involvement in the newly established World Trade Organization (WTO) after Congressional ratification. Finally, in 2000, the U.S. passed a "Permanent Normal Trade Relations" (PNTR) agreement with China that acceded it to the WTO, thus giving the world greater access to the large Chinese market and vice versa.[6]

However, each of these major FTAs were met with significant domestic political resistance that carried over into the 2000s. A common critique of free trade is that it often encourages capital to go where it can gain the highest return, which includes overseas investment at the expense of domestic projects. And wherever capital goes, labor tends to follow. Indeed, this was a principal complaint among U.S. labor unions like the American Federation of Labor and Congress of Industrial Organizations (AFL–CIO) who believed that FTAs like NAFTA would encourage U.S. manufacturing firms to move production to countries like Mexico where the cost of labor was much cheaper.[7]

Although the net effect of these deals on the U.S. labor market is disputed and often muddled in retrospect, what is clear is that they removed costly trade barriers while also diminishing the political power of interest groups who advocated for protection against foreign competition. These trade deals therefore paved the way for a large re-

[6] Douglas A. Irwin, *Clashing Over Commerce: A History of US Trade Policy* (Chicago: The University of Chicago Press, 2017), pp. 633-671
[7] Ibid, pp. 634-636

allocation of economic resources in both the U.S. and international economies. For example, according to one estimate, NAFTA alone was responsible for a 23.16% increase in trade flows between the U.S. and Mexico while simultaneously contracting U.S. trade with the rest of the world by -0.40%.[8]

For the purposes of this study, however, NAFTA is assumed to have a minimal impact on the formation of the 2008 crisis. Consistent with the findings of previous research, this perspective arises from the presence of confounding factors, like the Mexican currency crisis that began several months after NAFTA's passage in January 1994.[9]

In the wake of these new FTAs, the U.S. trade deficit began to grow rapidly. Between January 1992 and 2007, the trade balance deficit of the United States ballooned by 2,255%, peaking at more than -$65 billion in Q3 2006.[10] Given the nature of balance of payments accounting, trade deficits (surplus) are viewed as synonymous with excess investment (saving) because of financing concerns. In this context, it is important to note that previous research has found some portion of foreign investment during this period ended up in the U.S. housing market. The literature identifies these foreign flows as one of many contributing factors to the development of the housing bubble in the mid-2000s, the bursting of which catalyzed the 2008 global financial crisis.[11] The effect from the U.S. trade deficit, however, pales in comparison to the effect of contemporaneous

[8] John Romalis, "NAFTA's and CUSFTA's Impact on International Trade," *The Review of Economics and Statistics* 89 no. 3 (2007): 429.
[9] Ibid, pp. 416
[10] U.S. Bureau of Economic Analysis and U.S. Census Bureau, Trade Balance: Goods and Services, Balance of Payments Basis, Federal Reserve Bank of St. Louis, June 5, 2020, https://fred.stlouisfed.org/series/BOPGSTB
[11] Theodore H. Cohn, *Global Political Economy: Theory and Practice* (New York: Routledge, 2016), pp. 199

mortgage-backed security trading. In both 2007 and 2008, the annual trade volume in this market reached approximately $80 trillion. Previous research has found that this speculative trading was fueled and exacerbated by previous financial de-regulation and the behavior of U.S. investment banks who maintained exorbitant debt at the outset of the crisis.[12]

However, the 2008 crisis was not the first of its kind since the fall of the Soviet Union. As mentioned previously, Mexico suffered from a currency crisis in 1994. In 1997, Thailand's currency also collapsed and spread the contagion to adjacent Asian countries. In 1998, the Russian government began defaulting on its debt.[13] Despite the previous research about institutional malfeasance that preceded the 2008 crisis, it is also curious why, following a period of U.S. trade liberalization, the world began to experience a series of unexpected economic crises. For example, the odds of the total financial damage during August of the 1998 Russian Financial Crisis, according to orthodox financial analysis, were 1 in 500 billion. That is, an event occurring approximately only once every 1.37 billion years. We now know thanks to hindsight that orthodox financial theory grossly underestimated the odds of such events.[14]

In contrast to the economic crises that occurred after 1992, previous crises differed in two critical ways. First, previous crises, such as the Organization of Arab Petroleum Exporting Countries (OPEC) oil shocks of 1973 and 1979, and the 1980s Foreign Debt Crisis, were often the consequence of particular government decisions

[12] Nate Silver, *The Signal and The Noise* (New York: Penguin Books, 2015), pp. 35
[13] Charles P. Kindleberger and Robert Z. Aliber, *Manias, Panics, and Crashes: A History of Financial Crises* 6th ed. (New York: Palgrave Macmillan, 2011), pp. 285-286
[14] Benoit B. Mandelbrot and Richard L Hudson. *The (mis)behavior of Markets: A Fractal View of Risk, Ruin, and Reward* (New York: Basic Books, 2007), pp. 3-7

rather than a systemic market failure that the 2008 crisis typified. In the case of the oil shocks, OPEC countries intervened in the oil market by contracting supplies to raise prices and by circulating petrodollar reserves into the international banking system, which ended up being recycled into countries like Mexico and negatively impacted their ability to service their debt.[15] The debt crisis of the 1980s was partly a consequence of the preceding OPEC shocks and partly a consequence of economically-developing state officials who took out large loans from private banks in countries like the United States to avoid the stricter conditional loans that were issued by the International Monetary Fund (IMF). Consequently, the absence of conditionality meant that a borrowing state's officials were free to make mistakes, such as investing in non-productive projects that led to waste and corruption.[16] To avoid the onset of a broader financial contagion, the primary remedy in this case was to rely on the IMF to serve as the intermediary in restructuring borrower's repayment schedules with their creditors.[17]

A second difference between earlier and later crises is the scale of the damage. An upper-range estimate of the damage caused by the 1980s debt crisis is nearly $500 billion.[18] In the U.S. Savings and Loan Crisis, which began in 1986, it ended up costing approximately $160.1 billion in direct and indirect costs between the years of 1989 and 1995, according to the U.S. Government Accountability Office.[19] In comparison, the 2008 global financial crisis resulted in approximately $19.2 trillion (2011 dollars) in lost

[15] Cohn, *Global Political Economy: Theory and Practice*, pp. 174-175
[16] Ibid, pp. 175-176
[17] Ibid, pp. 185-186
[18] Manuel Pastor, Jr., "Latin America, the Debt Crisis, and the International Monetary Fund," *Latin American Perspectives* 16, no. 1 (1989): 79.
[19] U.S. Government Accountability Office, *Financial Audit: Resolution Trust Corporation's 1995 and 1994 Financial Statements*, GAO/AIMD-96-123, Washington, D.C.: GAO, 1996, pp. 8-13, https://www.gao.gov/archive/1996/ai96123.pdf

U.S. household wealth.[20] After he served as the Chair of the Federal Reserve, Ben Bernanke testified in a U.S. Court of Federal Claims case that the 2008 crisis was the worst crisis *for the U.S.* since the Great Depression. He also testified that the damage was so widespread that it compromised the solvency of 12 of the 13 most important U.S. financial institutions, like Lehman Brothers Holdings Inc. which ultimately failed.[21] Since the U.S. dollar is the global reserve currency and U.S. Treasury Bills are considered to be the safest investment vehicle in the global economy, the scale and scope of the 2008 crisis is very likely more consequential than the crises that came before it.

Literature Review

The two dominant perspectives in Political Economy are liberalism and neomercantilism, which are discussed below. Liberalism, espoused by U.S. officials like Mickey Kantor, provides good explanatory fit for the motivations and behavior of the United States following the end of the Cold War. In contrast, neomercantilism helps to explain some of the actions of U.S. trading partners like China during the same period. Additionally, a thorough examination of each school's epistemology will aid the reader in understanding where opportunities for risk management arise and how risk can be shifted during the course of trade relationships between nations.

Perspectives on Trade

In the literature of Political Economy, trade tends to be a contentious issue because much of the debate is couched in dichotomous terms such as positive vs. zero

[20] U.S. Department of the Treasury, *The Financial Crisis Response in Charts*, Washington, D.C.: U.S. Department of the Treasury, 2012, pp. 2, https://www.treasury.gov/resource-center/data-chart-center/Documents/20120413_FinancialCrisisResponse.pdf

[21] Starr International Company Inc. v. The United States, 11-799C U.S. 11-12 (2015), https://ecf.cofc.uscourts.gov/cgi-bin/show_public_doc?2011cv0779-443-0

sum, absolute vs. relative gains, and cost vs. benefit that each school uses to convey the implications of theory. In keeping with the framework established by Theodore Cohn (2016), the two predominant schools of thought that this research study will reference are economic liberals and neomercantilists. Although critical theories like constructivism and historic materialism are also represented in the Political Economy literature through concepts like Dependency Theory, these critical perspectives generally do not share a common set of theoretical assumptions. Furthermore, critical perspectives often place smaller states, like those of South America, at the center of analysis.[22] Thus, it becomes difficult to use critical theory to draw valid inferences about the trade decisions of a highly developed liberal nation like the United States. However, some critical perspectives will be mentioned where appropriate.

Distinct from political liberals, economic liberals trace their ideological lineage to Adam Smith whose *magnum opus*, *The Wealth of Nations* (1776) argued, in part, that a market system that was free to trade was the best way to increase a nation's overall prosperity. In this context, the word "free" most nearly means the absence of arbitrary state intervention in markets. Smith's ideas contravened contemporary ones who generally believed that the economy should be subordinated to state control to advance its interests.[23] Flowing from the free trade premise of Adam Smith, today's liberals still believe that individual entities like people and firms should be the central actor in economics because these individuals possess the most direct knowledge about how market transactions will affect them. That is, third parties like government officials

[22] Theodore H. Cohn, *Global Political Economy*, pp. 103-122
[23] Robert L. Heilbroner, *The Worldly Philosophers: The Lives, Times, and Ideas of the Great Economic Thinkers* 7th ed. (New York: Simon & Schuster, 1999), pp. 53-57

cannot be expected to know what the optimal outcomes are for the vast array of buyers and sellers. Furthermore, individuals are assumed to be rational actors in which each seeks to maximize his or her own self-interest.

Finally, modern economic liberals since World War II have advocated for an international order that relies on institutions like the WTO and the IMF to maintain a common set of rules and norms for member countries so that decision and information costs are kept to a minimum.[24] In doing so, it is believed that lower costs in general encourage a higher velocity of trade which, in turn, increases the overall level of subsequent economic benefit. In this context, liberals tend to frame trade as a positive-sum exchange that grows the size of the economic pie being shared. When evaluating choices about trade with another nation, liberals argue that it is preferable to weigh alternatives based on the total or absolute gains that accrue to the state.[25] Liberals also argue that comparing gains to that of a trading partner is a moot point because the pie is expected to grow anyway.

In general terms then, liberals believe that the state is uniquely positioned, with regard to matters of trade, to negotiate for and enforce common rules and norms with other nations on behalf of its constituents. However, liberals will also assert that the state may intervene in its own economy in times of emergency like recessions, pandemics, or wars in order to swiftly reallocate resources toward a common objective that helps the state survive.[26] Logically then, the implicit assumption of this view is that state leaders bear a great responsibility in addressing the sources of extreme, systemic risks that affect

[24] Theodore H. Cohn, *Global Political Economy*, pp. 78-79
[25] Ibid, pp. 55-56
[26] Bruce Caldwell in F.A. Hayek, *The Road to Serfdom: Text and Documents: The Definitive Edition*, (New York: Routledge, 2008), pp.32

the entire nation simultaneously. Trade, therefore, must be accounted for in this responsibility.

Consistent with realism in International Relations, neomercantilists view the international system as anarchic in which there is no centralized authority over the myriad of individual states. Although liberals also share this originating assumption, they draw much different conclusions about its implications. In contrast to liberals, state leaders in the neomercantilist view are encouraged to pursue opportunities that maximize state power to fend off predations from other states, often at the expense of individual actors. Neomercantilists therefore believe that the nation state must be the central actor in economic affairs. However, most neomercantilists share part of the liberal view that economic actors behave rationally and that free markets are best suited for generating wealth and influence, insofar as market activity improves the power and well-being of the state.[27]

Moreover, neomercantilists are more conscious about how costs and benefits from trade are distributed. Given an anarchic international system and the imperative of state interests, neomercantilists see little reason to believe that international institutions like the WTO have either the power or the willingness to fairly manage the competing interests of various actors. Rather, these institutions are viewed as arenas in which states vie for power.[28] Consequently, this continuous struggle to manage the balance of power between states generally leads neomercantilists to view economic relations in zero-sum

[27] Jonathan Kirshner, 'Realist Political Economy: Traditional Themes and Contemporary Challenges' in Mark Blyth, *Routledge Handbook of International Political Economy (IPE): IPE As a Global Conversation* (London: Routledge, 2010), pp. 36-47

[28] John J. Mearsheimer, "The False Promise of International Institutions," *International Security* 19, no. 3 (1994): pp. 7, doi:10.2307/2539078.

terms in which trade is only viewed as beneficial if it creates a favorable distribution of gains, relative to that of a trading partner.

After the fall of the Soviet Union, the U.S. pursued a path of trade liberalization that was premised on the idea that free trade was the policy most likely to generate a Pareto improvement for all stakeholders. In plain terms, a Pareto improvement occurs whenever at least one person is made better off without injuring anyone else in situations where resources like capital or labor are re-allocated. Flowing from this assumption, however, is a technical corollary: if free trade is the vehicle best suited for delivering a Pareto improvement in which no one is injured by trade decisions, then we should expect that, on average, free trade has little to no relationship to economic crises, a phenomenon which causes extreme, systemic harm.

Liberals derive this Pareto-improving assumption from the concept of comparative advantage, which was formalized by David Ricardo in 1817. Ricardo extended Adam Smith's concept of absolute advantage which asserts that states should specialize in those goods and services that they produce more efficiently than other states and then engage in trade for mutual benefit. Comparative advantage goes one step farther than absolute advantage by arguing that:

> *"…if someone happens to be the best doctor in town and, at the same time, the best secretary, then it would be preferable to be the higher-earning doctor-as it would minimize opportunity losses-and let someone else be the secretary and buy services from him."*[29]

In other words, even if a state has an absolute advantage in the production of all goods and services, the pursuit of economic independence, known as autarky, is not maximally

[29] Nassim Nicholas Taleb, *Antifragile: Things That Gain from Disorder* (New York: Random House, 2016) pp. 448-449

productive because a state's most inefficient sector will invariably waste resources like labor productivity in comparison to its stronger sectors. Therefore, all states are encouraged to forego autarky in favor of some form of specialization and then participate in trade with other countries. However, the critical limitation of Ricardo's argument, and liberals by extension, is that it is a deterministic model. This means that it is stripped of randomness like price variations, and thus tacitly assumes that there is no risk for engaging in trade. Obviously, under real-world conditions this is an unreasonable assumption.

Neomercantilists and critical theorists argue further that Ricardo's model is too narrow in scope. Some of these critiques include Ricardo's use of labor as the only input and for assuming that trade is balanced, where total exports and imports are equal in value. In short, critics contend that comparative advantage overlooks the intractable disparities, like differences in the cost of labor, between developed and under-developed nations and can therefore lead to skewed outcomes depending on the particular advantages each state possesses.[30] Liberal responses to these arguments are quick to point out that although there are inherent differences between states, protectionist measures that are designed to correct imbalances, like tariffs, fundamentally do not address the scaling property of opportunity costs that specialization alleviates. Thus, liberals argue that free trade has a greater utility function over the long run.[31]

In practice, this liberal perspective on free trade was visible during multilateral negotiations, called the Uruguay Round, that formally established the WTO in 1995. The

[30] Theodore H. Cohn, *Global Political Economy*, pp. 218-220

[31] Douglas A. Irwin, "Retrospectives: Challenges to Free Trade." *The Journal of Economic Perspectives* 5, no. 2 (1991): 201-08.

objective of U.S. trade negotiators during the Uruguay Round was to increase the openness of and access to the entire global economy, minimize state intervention in markets, and ensure all member states played by the same set of rules.[32] Up until the 2008 crisis, this liberal perspective went largely unchallenged.

However, the WTO rules that were established by the Uruguay Round often proved ineffective in deterring states from interfering in markets. Such interventions, if they are large enough, can inhibit the functioning of markets and result in distortions like large price changes. Neomercantilists and realists alike argue that states often have the incentive to intervene when the market delivers unfavorable change, such that their prospect of gains relative to that of a trading partner are diminished.[33] For instance, during the 1997 Asian Financial Crisis, Asian steel firms flooded the U.S. market with steel imports which drove down domestic prices and contributed to significant job loss as U.S. firms struggled to compete with cheaper imports amid the glut. It is therefore in this type of situation that the short-comings of portraying free trade as purely Pareto-improving or positive-sum become apparent. Under stable conditions, free trade may indeed be akin to a positive-sum exchange. But once a crisis occurs, trade can sometimes transform into a zero-sum dynamic for parties with relatively little political power, like the domestic steel workers whose unions were unable to secure WTO-facilitated compensation in the short-term.[34]

There is a technical term for this type of outcome that the literature rarely discusses at length, known as a Kaldor-Hicks efficiency in which some people are made

[32] Douglas A. Irwin, *Clashing Over Commerce*, pp. 652-654
[33] John J. Mearsheimer, "The False Promise of International Institutions," pp. 21-24
[34] Douglas A. Irwin, *Clashing Over Commerce*, pp. 667-669

better off (the foreign firms) and may be able to compensate those who are made worse off (U.S. workers) at some time in the future, however this compensation is not officially required. This type of outcome gives credence to critical theorists who argue that free trade creates unfavorable distributions of benefit and harm.[35] However, what critical theorists often get wrong is that developed capitalist countries can also be harmed by free trade with a lower-developed country thanks to a Kaldor-Hicks efficiency.

Another market-distorting problem that arose after 1995 was that several states enacted currency manipulation policies against the U.S. because of the dollar's central role as the global reserve currency. After the 1997 Asian Financial Crisis, affected countries like South Korea, Taiwan, and China believed that the best way to insulate themselves from another liquidity crisis was to increase the total amount of their currency reserves. To do this, they interfered in markets to devalue their currencies against the dollar with the objective of creating trade surpluses.[36] As a result, Asian exports like those in the Chinese manufacturing and consumer electronics sectors became artificially cheaper and thus more appealing to international buyers. U.S. exports to China and elsewhere, now more expensive thanks to a stronger dollar, failed to balance the growth of the import surge.[37]

The problem for the U.S. in this situation is that the world economy is a closed system. For every dollar of trade surplus within a country's current account balance (trade balance plus net income transactions), that dollar must be offset in at least one other country's trade deficit. In short, current account balances are fundamentally zero-

[35] Theodore Cohn, *Global Political Economy*, pp. 216
[36] C. Fred Bergsten and Joseph E. Gagnon. *Currency Conflict and Trade Policy: A New Strategy for the United States* (Washington D.C.: Peterson Institute for International Economics, 2017), pp. 7-10
[37] Douglas Irwin, *Clashing Over Commerce*, pp. 677-679

sum. Moreover, because of the dollar's role as the global reserve currency, manipulators naturally seek to obtain dollars in most cases. In practice, this meant that the U.S. trade deficit was, at a minimum, inflated by these currency distortions. To offset this accounting problem, part of the U.S. response was to encourage foreign capital investment that could be listed in its financial account, some of which ended up in the housing market. This foreign investment placed some upward pressure in housing demand which helped to raise prices and the overall supply of houses.[38]

Although the neomercantilist perspective appears to have more explanatory power with regard to market-distorting practices, liberals are keen to argue that such examples are the exception and not the rule. Specifically, because institutions serve as a forum for cooperation and as a common source of information, this gives competing states the opportunity to alleviate conditions that lead to concerns about relative gains.[39] However, as we will see in the data section, the exceptions can be far more consequential than the rule under certain circumstances.

Perspectives on Crisis

As it relates to the causes of financial crises, there is not a substantial gulf of disagreement between liberals and neomercantilists. Neomercantilists are often skeptical of financial integration with other states, especially when rival states are capable of shifting the direction and size of capital flows across borders.[40] Along similar lines, liberals who favor a greater role for government intervention assert that such intervention may be necessary because the international financial system fails to tame the volatility

[38] Bergsten and Gagnon, *Currency Conflict and Trade Policy*, pp. 90-93
[39] Keohane, Robert O., and Lisa L. Martin. "The Promise of Institutionalist Theory." *International Security* 20, no. 1 (1995): pp. 44-46. doi:10.2307/2539214.
[40] Theodore Cohn, *Global Political Economy*, pp. 196

inherent in currency valuation, which can place states at the mercy of market outcomes.[41] Thus, both schools acknowledge, to a degree, that large and unexpected deviations can have a disproportionate outcome on a state's financial stability.

One of the most comprehensive views on the mechanics of financial crisis was originally formulated by Hyman Minksy and expanded on by Charles P. Kindleberger and Robert Z. Aliber in their 2011 book *Manias, Panics, and Crashes*. Starting with Minsky's model, they assert that during periods of high economic growth the supply of credit to borrowers (in the aggregate) expands. As the supply of credit expands, borrowers become more risk-tolerant and take out debt to purchase assets like housing or stocks. In this situation, borrowers are betting that asset prices will continue to rise faster relative to interest rates, thus creating a profit for them after making their interest payments. However, this behavior is not sustainable over the long-run due to the cyclical nature of markets. In order to stay afloat financially, this means a borrower will have to correctly anticipate the timing of market trends. Minsky hypothesized that market trends were the result of "shocks" to the economic system that can cause both booms and busts.

In this case, shocks most likely refer to a large re-allocation of resources brought about by one or more substantial changes in the economic environment. For example, the internet ushered in rapid growth in information technology industries in the late 1990s and early 2000s, causing the dot-com bubble.[42] Following this logic, sweeping trade liberalization policies can also result in shocks because of trade flows and resource re-

[41] Susan Strange, *Casino Capitalism* (Oxford, UK: B. Blackwell, 1986), pp. 8-14
[42] Charles P. Kindleberger and Robert Z. Aliber, *Manias, Panics, and Crashes: A History of Financial Crises*, pp. 26-28

allocations. John Romalis' research about NAFTA, mentioned previously, partially confirms this inference.

Kindleberger and Aliber also discuss the consequences of shocks clustering together in a short period of time. They refer to these clusters as waves that contribute to an unsustainable expansion of credit which ultimately results in a bubble. They argue that between the 1970s and the 2000s, there have been four distinct international credit bubbles and that these waves are not independently occurring phenomenon. That is, a preceding wave exerts some meaningful impact on the creation of a subsequent wave.[43] However, the strength of the relationship between each individual wave is variable.

Kindleberger and Aliber's observation about waves and their impact is not unusual in economics. Polymath Benoit Mandelbrot found similar behavior in financial markets, starting with his study of cotton prices in the 1960s. From his study of cotton, Mandelbrot found evidence of what he calls long-term dependence. Under certain circumstances, the prices of the past can exert a strong influence on today's prices. In contrast, financial theory as it existed before the 2008 crisis believed that inputs to the prices of today are independent from those of yesterday: only the present and the future matter as inputs. In other words, Mandelbrot argues that some market behavior like the movement of asset prices, even housing prices, adhere to rules of conditional probability. That is, the outcome of some future event B is conditional on the outcome of past event A. However, the strength of this influence depends on how far back in time you go and how much volatility is clustered together in the past. As a heuristic, Mandelbrot found that a series of large price movements that cluster together closely in time yields a very

[43] Ibid, pp. 273

strong influence on future prices. In other words: when it rains, it pours. For example, Mandelbrot cites how Cisco Systems' unprecedented revenue growth between 1995 and 2000 fueled a wave of investor speculation that was premised on the belief that such growth would continue, which caused a bubble that invariably burst in late 2000.[44]

In short, the chief implication of Kindleberger, Aliber, and Mandelbrot's work is that international market distortions like contemporaneous manipulation of several currencies aimed at creating artificial trade surpluses can have an unseen but considerable effect on the movement of asset prices in the future. In turn, this long-term dependence helps contribute to the formation of credit bubbles.

Gaps in the literature

In light of long-term dependence and credit waves, neither liberalism nor neomercantilism offers a convincing theoretical solution to the static limitations of comparative advantage. Let us recall that because Riccardo's model is deterministic and continuous, random events have no influence on the expectation of trade outcomes, which are, in the liberal view, supposed to be Pareto-improving. Furthermore, calls for targeted government intervention as a solution does not fully address how to insure against the risks of unforeseen events that arise from trade, like the steel dumping case mentioned previously. Although such dumping is already illegal according to WTO rules, that did not deter Asian firms from flouting the rules. Moreover, such intervention into the complex mechanics of the global economy, like actively managing currency rates

[44] Benoit Mandelbrot and Richard Hudson, "Long Memory, from the Nile to the Marketplace" in *the (mis)behavior of Markets*, pp. 173-193

as scholar Susan Strange suggests[45], invites the potential for egregious miscalculations due to the non-linear properties of currency rates.[46]

However, in some of the more modern literature about microeconomics, the epistemology that supports the liberal position on free trade and confronts this question of risk is known as Expected Utility Theory (EUT). EUT was formalized by John von Neumann and Oskar Morgenstern in 1947 and posits that decisions under uncertainty can be modeled through the use of gambles.[47] EUT assumes that rational actors make judgments about a set of choices as if they were following a quantitative model that aims to find the greatest personal utility according to some individual function.

For example, suppose there are two gambles generated by a fair coin flip. Gamble 1 yields a gain of $10 or a loss of $1 to your initial level of wealth: $10. Gamble 2 yields a $20 gain or a $10 loss. Choosing between these gambles depends on the function used to derive an expectation. If we assume a convex function (risk-tolerant) like x^2, then the expected values are:

$$1: .5 * (10 + 10)^2 + .5 * (10 - 1)^2 = 240.5$$

$$2: .5 * (10 + 20)^2 + .5 * (10 - 10)^2 = 450$$

Gamble 2 thus looks like more appealing. However, if we use a concave function (risk-averse) like $\sqrt{x}$, then Gamble 1 will offer a higher expected payoff. Given that liberals expect a Pareto-improvement for free trade, they can be best characterized as risk-tolerant. Neomercantilists, on the other hand are a bit more puzzling due to their acknowledgment of free trade as beneficial while also being motivated by relative gains.

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[45] Susan Strange, *Casino Capitalism*, pp. 146-151

[46] H.L. Wei and S.A. Billings, "Power-law behaviour evaluation from foreign exchange market data using a wavelet transform method," *Physics Letters A* 373, no. 37 (2009): 3328.

[47] Robert H. Frank, *Microeconomics and Behavior* 9th ed. (New York: McGraw-Hill Irwin, 2015), pp. 180

Interestingly, EUT does not account for the possibility of changing one's preferences like neomercantilists sometimes do.

Consequently, recent research has shown that this limitation of EUT can lead to flawed inferences. Specifically, the use of linear combinations, in the manner demonstrated above, to derive an expected average is not warranted in all circumstances. In situations where gambles repeat themselves through time, such as continuous international trade, then a stochastic growth process is required.[48] A stochastic process would model potential changes to risk preferences over time, like the changes in behavior that would result from an unbroken winning streak or severe damage brought on by a financial crisis. In other words, the shortcoming of using EUT to understand and manage risk is that its assumptions are static, much like Riccardo's model.

The practical problem then in applying EUT to decisions about free trade and controlling the risk of financial crisis is that it can blind analysts and decision makers to the non-linear behavior of market phenomenon. That is, EUT provides a sub-optimal framework for understanding outlier events, also known was tail events because of their location within a statistical distribution. Accurate measurement of the probability of tail events such as an unusually tall person, a large deviation in a country's trade balance, or mortgage default rates reaching a certain level, depends largely on the tools being used.

Mandelbrot has shown that for a long time, orthodox economic models were using the wrong tools. Specifically, the Gaussian or normal distribution was relied on to make inferences about the risk of tail events. Similar to the findings of Wei and Billings, Mandelbrot argues that many market phenomenon actually follow a power-law

[48] Ole Peters, "The Ergodicity Problem in Economics," *Nature Physics 15*, no. 12 (2019): 1216-1221, DOI: 10.1038/s41567-019-0732-0

distribution in which tail events are assessed as more likely to occur and also tend to alter the properties of the entire distribution.[49] To illustrate, if one were to assess, in advance, the probability of the earthquake that led to the 2011 Fukushima disaster in Japan using a normal distribution, the odds would be appraised at about once every 13,000 years. In contrast, a power-law distribution model would peg the odds at once every 300 years.[50]

Mandelbrot's analysis may partially explain the contemporaneous reaction to the 2008 crisis. Never before in American history had so many citizens defaulted on their mortgages simultaneously. After all, if one homeowner defaults in Michigan, this surely has no impact on homeowners in Florida. Of course, the existence of a nationwide housing bubble is a condition that affects everyone equally. In calculating the probability of such an event happening, the credit rating agencies responsible for appraising the quality of all mortgage-backed securities on the market relied on a Gaussian framework pioneered by 20th century French mathematician Louis Bachelier.[5152] The reason Bachelier's framework was used was because the normal distribution lends itself well to statistical inference about probability. For instance, once a data set contains approximately 30 observations, according to the Central Limit Theorem, a stable value for the mean and standard deviation emerge. And from these stable values, probabilities of tail events like mortgage default can be inferred. However, the normal distribution has "thin-tails," which means that the farther away an observation is from the average, its probability of occurrence decreases at an accelerating rate. An event that is 3 standard deviations (3-sigma) away from the mean (can be positive or negative) has a probability

[49] Benoit Mandelbrot and Richard Hudson, *the (mis)behavior of Markets*, pp. 147-159
[50] Nate Silver, *The Signal and The Noise*, pp. 170
[51] Ibid, pp. 26-30
[52] Benoit Mandelbrot and Richard Hudson, *the (mis)behavior of Markets*, pp. 59-63

of 1 - .9973 = .0027 or 1 in 370. The probability of a 4-sigma event is 1 in 15,787, which is substantially lower odds despite one additional deviation.

In contrast, a fat or thick-tailed distribution means that events far away from the average have different odds and are far more consequential in determining the distribution's properties. As a result, the tails of these distributions often convey more useful information than the average does. That is, as the tails fatten, inferences that use values of the average and standard deviation become increasingly unreliable.[53] Therefore, policy decisions that might rely on expected averages, like the ones derived from EUT, are now subjected to substantially greater margins of error in the presence of variables that do not conform to the normal distribution. This marginalization of expected averages is similar to what Ole Peters found with regard to EUT.

Methodology and Hypotheses

To operationalize the research question, the independent variable, U.S. trade liberalization, will use the monthly U.S. trade balance (total goods and services, balance of payment basis) between 1992 and 2009 as a singular representation of aggregated U.S. economic activity. Given that this figure is a component of the U.S. current account and is tracked by international institutions, the trade balance can be viewed as a reliable proxy that reflects the consequences of trade policy. However, currency manipulation in the late 1990s and early 2000s introduces some noise into the data's integrity.

1992 is the selected start date for two reasons. First, the U.S. did not fully track the trade balance on a monthly basis prior to January 1992. Furthermore, according to U.S. Census data, the monthly trade balance before 1992 only accounted for goods but

[53] Nassim Nicholas Taleb, *Statistical Consequences of Fat Tails*, (Stem Academic Press, 2020), pp. 21-23

not services. Between 1960 and 1991, the trade balance for both goods and services was only reported in annual terms. Therefore, in order to avoid the small sample bias that annual figures would introduce, a monthly basis that includes both goods and services between 1992 and 2009 will be used as the primary dataset for analysis. Additionally, in order to account for time lag and confounding effects that may have existed prior to enactment of the Uruguay Round in 1995, the data series needs to be extended to include previous years. 2009 is the cutoff date to also account for time lag effects given that the nadir of the crisis occurred in 2008.

Despite the technical necessity for using 1992 as the start date for analysis, it is important to acknowledge that the trade deficit in January 1992 was much smaller than it had been in prior years. For instance, in 1987, the annual deficit was the highest it had ever been at approximately -$151.68 billion, a cumulative total. Therefore, in order to partially account for the effect that these record deficits before 1992 may have had, a supplemental regression test will be used on annualized terms between the years of 1975 and 1995.

The dependent variable will be represented by the monthly U.S. Housing Price Index (seasonally adjusted) between 1992 and 2009. The Housing Price Index incorporates data from all 50 U.S. states and samples from millions of housing price records which partially control for demographic, regional, and intra-state factors.[54] In other words, the Housing Price Index incorporates data from all manner of housing sales, including both subprime and prime classifications, both of which were also bundled together in mortgage-backed securities. The seasonally adjusted metric was used to

[54] Federal Housing Finance Agency, "House Price Index," Federal Housing Finance Agency, Accessed on June 21, 2020, https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx

account for confounding data that may result from a surge in housing turnover common to the summer months.

The methodology to be used is a linear regression analysis with a 99% confidence interval. This interval is relevant given the distinctions drawn between thin and fat-tailed variables in the Literature Review. By broadening the interval to 99%, this helps to account for the impact that outliers might have. Regression analysis has been selected because there is an observable linear pattern between the variables when they are plotted together. Accordingly, regression helps to account for the variation within this linear bias. Consistent with conventional statistical hypothesis testing, the hypotheses are separated into the null and alternative hypotheses:

> Null hypothesis: there is no relationship between the U.S. trade deficit and the housing bubble.
>
> Alternative hypothesis: there is a relationship (positive or negative) between the U.S. trade deficit and the housing bubble.

Based on the findings of previous research, the expectation is that the null hypothesis will be rejected. However, because U.S. trade policy does not formally direct and coordinate the economic decisions of individual actors, it would be inappropriate to view evidence in favor of the alternative hypothesis as an indication that policy played a direct causal role in the formation and subsequent bursting of the housing bubble that catalyzed the 2008 crisis. Rather, a finding in favor of the alternative hypothesis might suggest that U.S. trade liberalization was a necessary pre-condition that allowed effects from large resource re-allocations to affect the U.S. housing market.

Methodological Limitations

Given that this approach relies on a time-series dataset, the results of a simple linear regression analysis will be somewhat limited in their applicability. This is due to the fact that the data are continuous and time lag effects are difficult to fully track without the use of advanced methods. To fully control for these issues, more advanced techniques like applied econometrics would be required, which is beyond the scope of this study.

Data

The independent variable between January 1992 and December 2009 is illustrated graphically below by Figure 1. Grey shaded areas in the graph indicate endogenous U.S. recessions. The first one began in March 2001 after the bursting of the dot-com bubble and continued following the 9/11 attacks. The second grey area denotes the 2008 crisis.

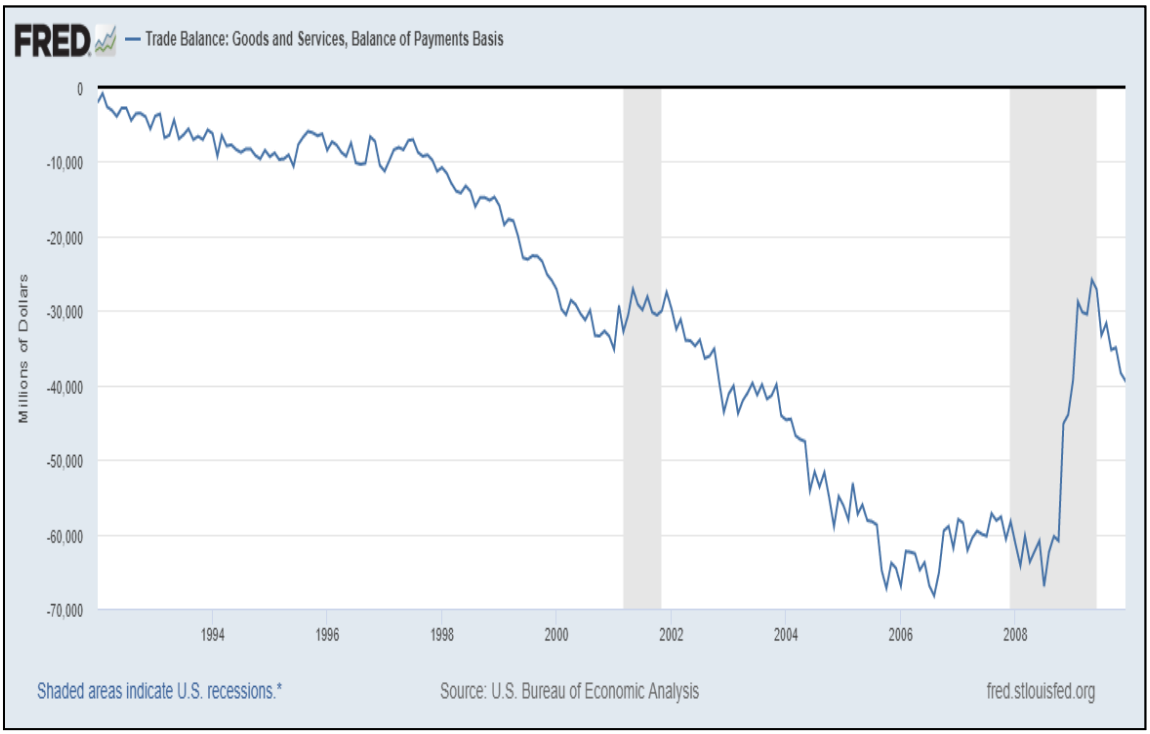


Figure 1: U.S. Bureau of Economic Analysis and U.S. Census Bureau, Trade Balance: Goods and Services, Balance of Payments Basis, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/BOPGSTB, June 5, 2020.

The dependent variable between January 1992 and December 2009 is illustrated graphically below by Figure 2. The base Index score is 100 which implies no overall price changes. Higher Index scores mean higher prices and vice versa.

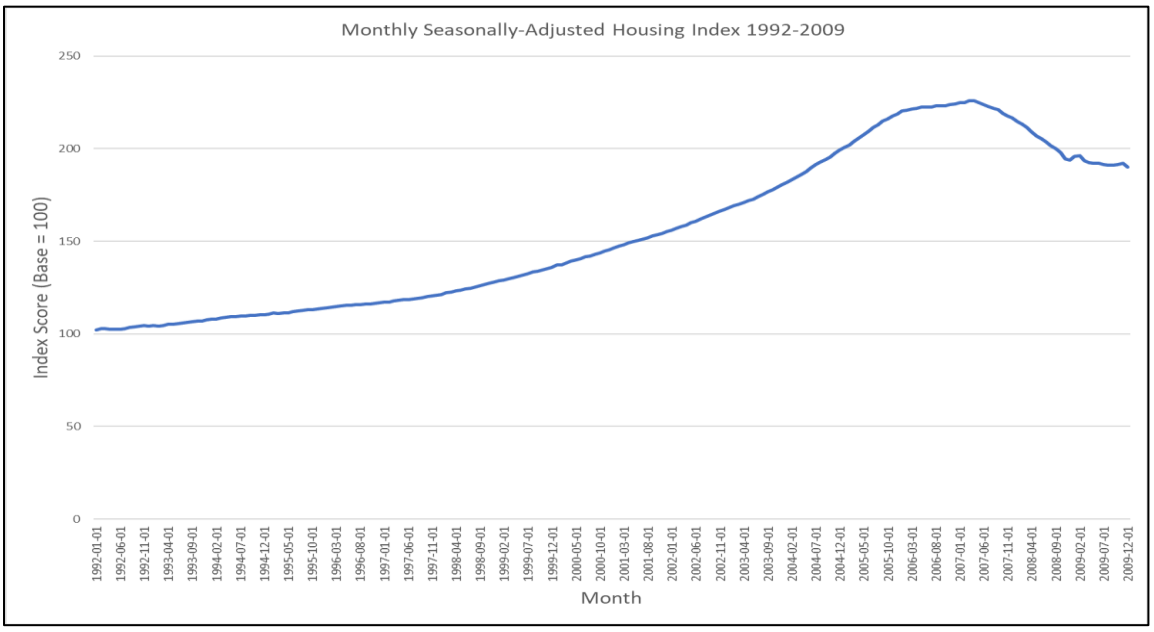
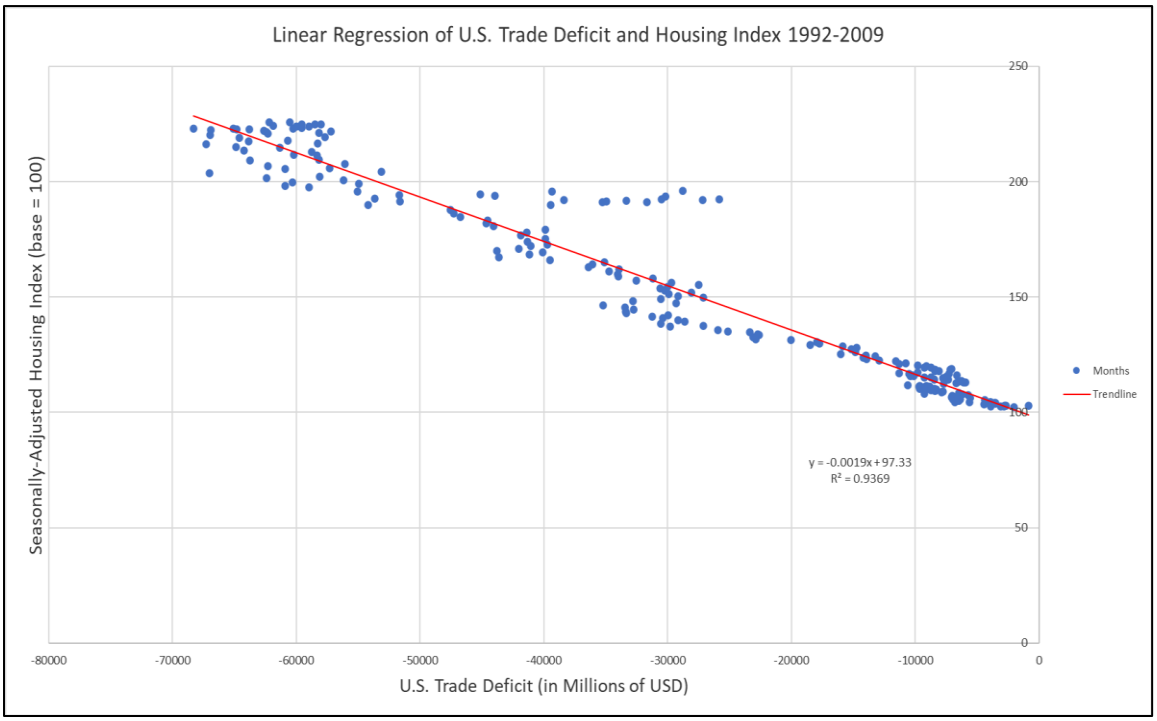


Figure 2: Monthy Seasonally-Adjusted U.S. Housing Index 1992-2009

Plotting the variables together and using a regression analysis yields figure 3.



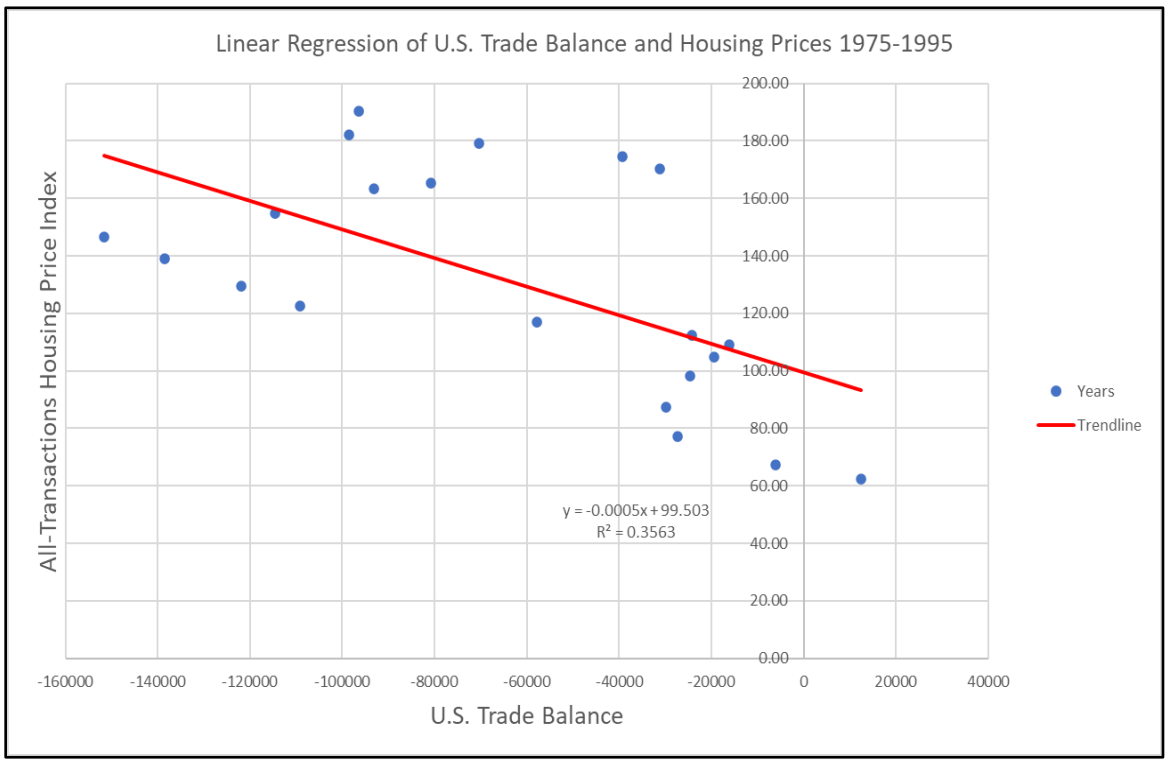
Regression Statistics	
Multiple R	0.967929307
R Square	0.936887143
Adjusted R Square	0.936592223
Standard Error	10.53924568
Observations	216

	Coefficients	Standard Error	t Stat	P-value
Intercept	97.33020474	1.250355817	77.84200581	5.8252E-159
X Variable 1	-0.001920023	3.40655E-05	-56.36267636	2.306E-130

Figure 3: Regression Analysis of U.S. Trade Deficit and U.S. Housing Index 1992-2009.

Next, to account for the large deficits that existed before 1992, a regression analysis which uses annualized data from 1975 and 1995 (n=21) will be conducted and is reflected below in Figure 4. Since this study is measuring the impact of the Uruguay Round and the PNTR which both came into effect after January 1, 1995, the data has been extended to include all of 1995 to account for time-lag effects. However, it must be noted that using annualized data instead of monthly data risks the introduction of a small sample bias.

The data for the explanatory variable is taken from the U.S. Census Bureau, Economic Indicator Division and reflects the U.S. trade balance in goods and services on a Balance of Payments basis in annual terms. The data for the response variable is also sourced from the Federal Housing Finance Agency and uses the All-Transactions House Price Index for the United States which is not seasonally adjusted and does not account for more granular variables like the current Housing Index does. However, the current Housing Index did not start incorporating data until January 1991. Additionally, the All-Transactions Index is pegged relative to prices in January 1980, which serves as the basis and is marked at 100.00.



Regression Statistics	
Multiple R	0.59691417
R Square	0.356306527
Adjusted R Square	0.322427923
Standard Error	32.60021315
Observations	21

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	99.50314772	12.06308538	8.248565319	1.06073E-07
X Variable 1	-0.00049585	0.000152899	-3.243016337	0.004280366

Figure 4: Regression Analysis of U.S. Trade Deficit and All-Transactions Index 1975-1995.

Given the regression data in Figure 3 and Figure 4, and the 99% cutoff interval where p must be greater or equal to .01, there appears to be sufficient evidence to reject the null hypothesis in both Figures 3 and 4.

Building off of the discussion between thin and fat-tailed variables, the next series of tests will help establish the degree of volatility exhibited in the independent variable. Since trade deficits need to be offset in the financial account, a high level of volatility in the current account can result in an excess demand for foreign capital investment than there otherwise would be in periods of greater stability. To help measure this volatility, a kurtosis test can be used to establish the significance of large deviations in the

independent variable. A normal distribution has a kurtosis value of 3.0. Distributions with kurtosis values less than 3 have thinner tails and distributions with a value greater than 3 have thicker tails.

Using the kurtosis test in MS Excel and accounting for its adjustment of -3.0 basis points, the monthly U.S. trade balance between 1992 and 2009 reflected in Figure 1 has a kurtosis of 1.685 which indicates very thin tails. This implies that large deviations from the average are even less consequential than in a normal distribution. However, it is clear from looking at Figure 1 that there are huge jumps in the curve, especially in 2008. Moreover, the 2008 crisis caused significant damage as mentioned previously, so this kurtosis test is inconclusive and creates a puzzle.

However, if the kurtosis test is changed to track the change in trade volume *between* months, then this may better capture trends in volatility, instead of relying on the nominal, end-of-period values that Figure 1 depicts. Using this metric, displayed below in Figure 5, and measuring kurtosis, we get a value of 11.15 which tells us that there are *very* large deviations taking place within the U.S. current account on a monthly basis. For example, the average monthly change in the deficit between June 1994 and June 1998 was -$112.63 million per month. Between July 1998 and July 2002, the average change had almost quadrupled to -$415.92 million per month. After the nadir of the crisis had passed the U.S. in late 2008, the trade deficit began to swing wildly, likely as a consequence of markets attempting to self-correct.

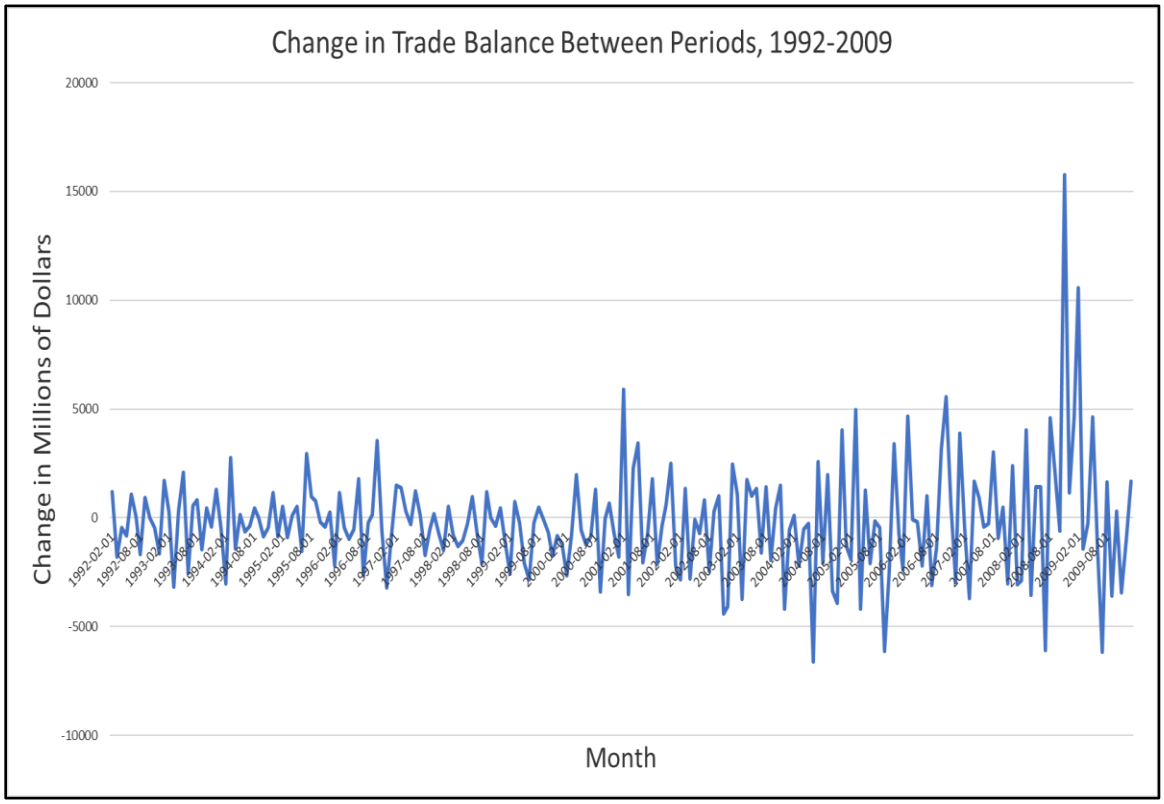


Figure 5: Measures the change from each previous month.

Additionally, Mandelbrot advises that there is another way to test if a variable is becoming more or less volatile. By examining the behavior of its second central statistical moment, the variance, we can get an idea of how dispersed the data are.[55] According to the Central Limit Theorem, after about 30 observations the mean, variance, and standard deviation should start to converge to a stable value. That is, the inclusion of one additional observation should not cause these values to change significantly. But looking at the variance of the trade balance in Figure 6 below, it is clear that between June 1994 and June 1998 the variance did initially converge to and remain at a stable value of approximately $5.7 trillion. After June 1998, however, the variance begins to grow rapidly despite the supposed stabilizing effect of 84 prior observations.

[55] Benoit Mandelbrot and Richard Hudson, *the (mis)behavior of Markets*, pp. 95

Furthermore, the variance peaks at $472.35 trillion in October 2008 with 173 prior observations. With the addition of just 14 additional data points (November 2008 thru December 2009), the variance again changes considerably to $445.2 trillion, a decrease of -5.75%.

The purpose of the kurtosis and variance tests are meant to show that trade liberalization was not reducing volatility as the narrative of the Great Moderation would suggest. Instead, the U.S. trade balance during this time was becoming more volatile.

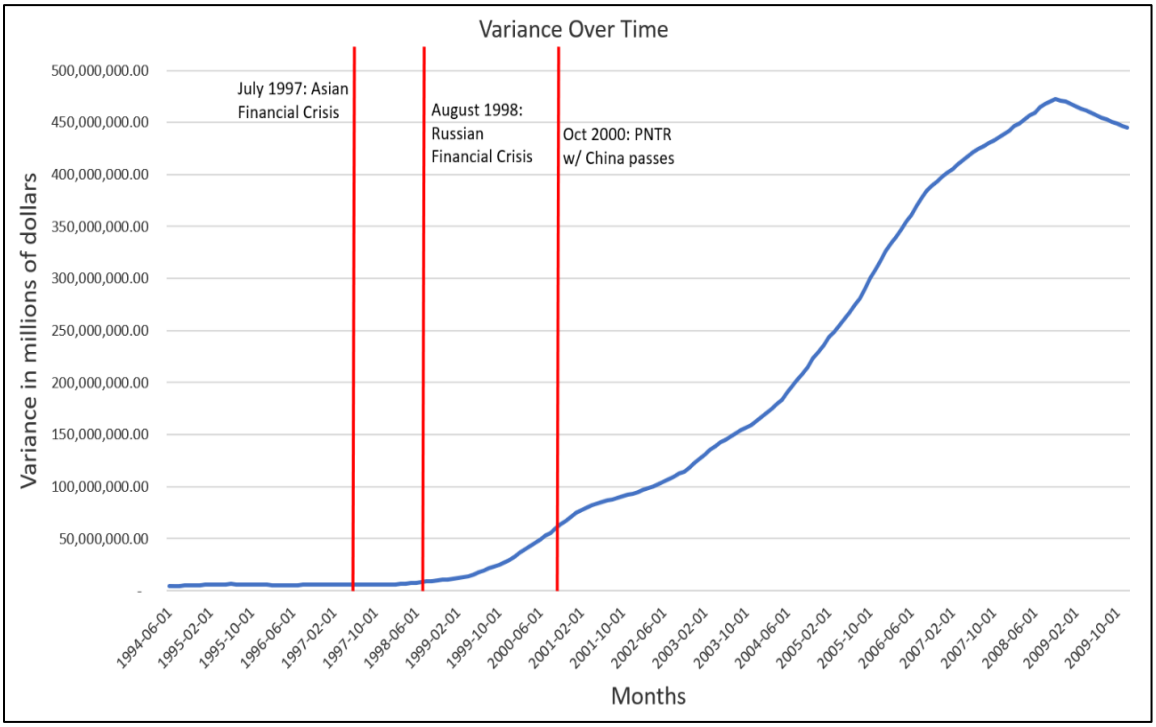


Figure 6: Beginning with 30 observations in June 1994, each additional month is added to the calculation of the variance.

Discussion

At first glance, the finding of a strong relationship between the trade deficit and rising housing prices between 1992 and 2009 is not surprising. After all, a trade deficit that dominates a state's current account must be offset in its financial account, which the literature tells us invites foreign investment and often flows into "safe" assets like housing. This relationship between rising trade deficits and housing prices also appears to be present between 1975 and 1995, however the strength of the relationship during this time, R^2 = .356, is significantly weaker than it would become after 1995, R^2 = .937.

This strong result after 1995 may be partially explained by two observations. First, the variance and kurtosis tests of Figure 5 and 6 respectively provides some evidence that the trade deficit between 1992 and 2009 behaved more like a fat-tailed variable than a normal one. That is, there was a high level of volatility within the trade balance that had to necessarily be offset in the U.S.' financial account. Second, the work of Kindleberger, Aliber, and Mandelbrot advises us that when such volatility clusters together, it can cause large changes in market functionality, in this case the movement of housing prices, across long periods of time. This volatility likely accelerated from the Asian and Russian Financial Crises in 1997 and 1998 respectively, which introduced a period of currency manipulation against the dollar and also reflects a preference on the part of international investors to invest capital and provide exports to the United States as a tactic to avoid the pain of internal adjustment.

To offset this volatility in its financial account, the U.S. opened itself to foreign investment, thanks to low interest rates and the removal of barriers like Trade-related Investment Measures (TRIMs) after 1995, which would have made it costlier for foreign

firms to invest in the U.S. Housing was a likely destination for foreign capital flows because, aside from U.S. Treasury Bonds, it was deemed safe because risks were assumed to be largely uncorrelated. In 2005, former Federal Reserve Chairman Alan Greenspan remarked that housing bubbles were local and therefore not a national issue.[56] After the crisis had passed and housing prices had returned to normal, currency manipulation had been corrected, and regulation was introduced to change the behavior of U.S. financial institutions, excess capital and debt concentration in the housing sector was subsequently discouraged.

Since U.S. policy remained fairly consistent in terms of pursuing free trade since 1992 and before the 2008 crisis, there is sufficient evidence to reject the null hypothesis in favor of the alternative. Even though the nominal value of the trade deficit is just a snapshot of the market's total activity at a specific point of time, the high level of volatility during this time likely would not have been possible if the Uruguay Round and the PNTR did not remove barriers like TRIMs that had previously moderated large changes in trade flows.

But in spite of a strong statistical relationship between the deficit and the housing bubble, U.S. trade policy after the end of the Cold War cannot be viewed as a causal factor in the rise of housing prices. Instead, it is more appropriate to view trade liberalization as an antecedent condition whose absence of unilateral mechanisms to deter market-distorting practices encouraged foreign governments to shift financial risk onto the United States. In part, this was because of the dollar's central role as the global

[56] Edmund L. Andrews, "Greenspan Is Concerned About 'Froth' in Housing," *The New York Times*, May 21, 2005, *https://www.nytimes.com/2005/05/21/business/greenspan-is-concerned-about-froth-in-housing.html*

reserve currency and prevailing perceptions that U.S. markets, particularly housing, were highly profitable relative to their risks. Therefore, in answering the research question, it is likely that any contribution trade liberalization had with regard to the 2008 crisis was both indirect and subtle. However, determining the precise strength of this influence is beyond the capacity of this study and would require an in-depth treatment of the behavior of international firms both before and after the post-Cold War FTAs came into force.

Conclusion

In terms of risk management, the problem with the two major FTAs after the end of the Cold War is not that free trade as such is too risky. Instead, it was the timing and sequence of these deals that mattered. In particular, the multilateral WTO negotiations in 1995 and the PNTR with China in 2000 uniquely positioned some countries afflicted by the 1997 Asian Financial Crisis to shift risk onto the U.S. Specifically, the WTO negotiations discouraged states from taking quick unilateral action against market intervention in favor of a lengthy arbitration process. However, in the aftermath of the 1997 crisis, states like China faced a choice: they could follow WTO rules and absorb the damage or try and mitigate it by increasing currency reserves through an artificial trade surplus. The latter option required the U.S. to bear the fiscal burden of providing dollars through increased import purchases. In response to this artificial imbalance, the U.S. choose to open itself to foreign investment.

Furthermore, large resource re-allocations that occur quickly can cause long-lasting economic problems. As the example of the steel dumping case in the literature review relates, an unexpected supply glut caused serious domestic labor displacement. Other sectors like manufacturing and consumer electronics were also deeply impacted by

a Chinese export surge. And of course, high levels of capital concentration in the housing sector increased the risk of a price collapse.

The global economy is a complex system in which countless variables interact on a daily basis. Chance and volatility are intractable and inherent to economic activity. Nonetheless, free trade remains a dominant theme among economic liberals who argue that individual actors operating under a set of common rules with few barriers and guided by self-interest will produce optimal results most of the time. However, this study has helped to show how globalization, as it occurred after the Cold War, resulted in unexpected transfers of risk that were made possible by permissive trade policy.

The principal implication of this study is that state leaders should exercise caution about making sweeping changes with respect to multilateral or even regional trade agreements. In particular, FTAs that are negotiated within one or two years of a previous international financial crisis is a risky prospect because of the increased likelihood that a potential trade partner will elect to avoid internal adjustment, driven by relative gains logic. However, state leaders who are committed to trade liberalization could adopt three risk mitigation tactics.

First, because of the existence of long-term dependence, trade agreements could adopt a phased approach to reduce the risk of large resource re-allocations disrupting markets. Second, building in unilateral countermeasures into agreements, like currency exchange provisions, can enhance a state's ability to respond to market interventions. However, since most states are member states in the WTO, unilateral mechanisms outside of WTO rules may prove difficult to implement or might create compliance costs if WTO rules are intentionally circumvented. But in some cases, the United States' unique

position within both the WTO and IMF may serve as an advantage in offsetting some of these compliance costs. Finally, a third option could be to adjust a state's fiscal and monetary policy in proportion and in response to market distortions in the short-term, such as interest rate adjustments or temporary and selective subsidies to offset injury in the absence of a WTO resolution.

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Appendix 1

Dataset for Trade Policy And Financial

Curriculum Vitae

Dan De La Vega is a full-time graduate student in the combined Global Security Studies and Certificate in Intelligence Program at Johns Hopkins University. He has previously earned a Bachelor of Science in Finance from the University of Connecticut and an Associate of Science in Intelligence Operations from Cochise College. He will continue his graduate education at George Mason University by working toward a Master of Arts in Economics. He is a veteran of the United States Army with experience in both the Infantry and Military Intelligence branches. He currently resides in northern Virginia.